The Water Utility Enterprise

FINAL - JUNE 1988

Santa Clara Valley Water District

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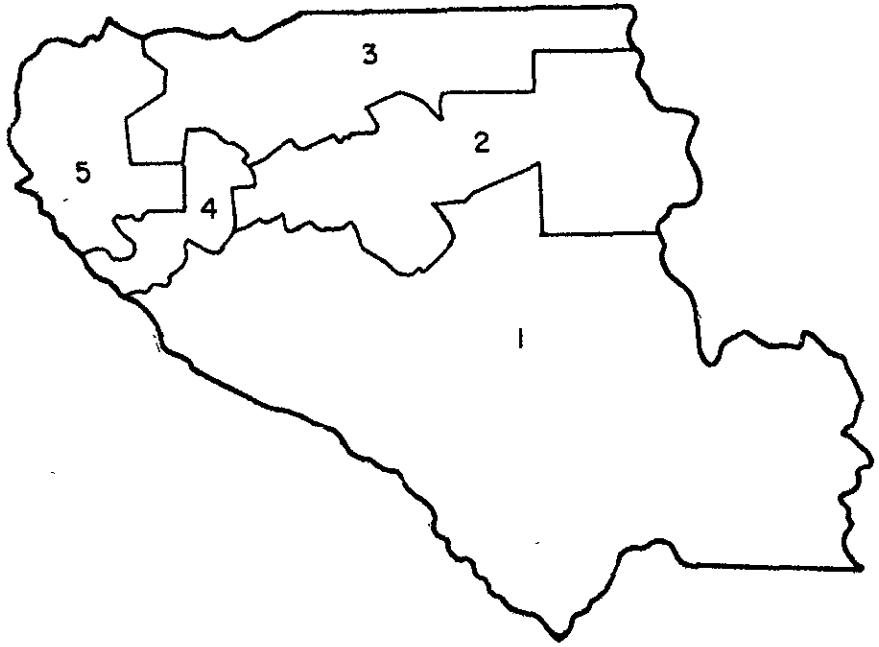

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Santa Clara Valley Water District

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Nineteen eighty-seven was a year marked by two very significant events in the history of the Santa Clara Valley Water District.

First, the San Felipe Division of the federal Central Valley Project started delivering water to this county in June 1987, after decades of effort to ensure an adequate supply of water for Santa Clara County. The dedication ceremonies were held August 8, 1987, and all facilities except the supervisory system have now been transferred to the District for operations and maintenance.

The second significant event occurred on December 4, 1987 when the Gavilan Water Conservation District and the Santa Clara Valley Water District merged, and thus established one district for the management of water throughout Santa Clara County.

Rainfall during 1986-87 was about 55% of normal. Most of the District's reservoirs reached less than half their capacity. Current year, 1987-88, is the second consecutive dry year. Rainfall is approximately 60% of normal, and the District's reservoirs were about 6% of their capacity. Within Santa Clara County, Hetch Hetchy instituted a mandatory 25% conservation program with severe monetary penalties, the State Water Project is delivering entitlement water only, and the San Felipe Division is providing 75,000 acre-feet. Because some areas of the Santa Clara groundwater basin are already as low as the 1976-77 drought, the District's Board of Directors passed a resolution on April 26, 1988, calling for a 15% voluntary conservation from 1987's water use. With cooperation from the water retailers and consumers, there will be sufficient water to meet the needs of the county during 1988-89.

Expansion of the In-County Distribution System continues. Snell Pipeline Phase I is complete, and Phase II is scheduled to be finished in August 1988. Santa Teresa Water Treatment Plant, Santa Teresa Tunnel, Greystone Pipeline and Pump Station, and Santa Teresa Force Main are under construction and are expected to be completed in October 1988. Calero Pipeline is currently in design phase. The Engineer's Reports and environmental assessments are in progress for Milpitas Pipeline and Mountain View Distributary.

Anderson Dam hydroelectric generation facility is under construction with a scheduled completion in June 1988. Based on current projections of costs and revenues, the hydroelectric facility on the Kirk and Page Turnouts from Central Pipeline is not feasible. However, the Board of Directors will re-evaluate this project in October 1988.

Anderson spillway enlargement is essentially complete.

The Water Utility Enterprise continues to be impacted by the District's involvement in efforts to regulate the storage of hazardous materials and to have toxic spill sites within Santa Clara County identified and cleaned up. The District's major objective — and the basis for its involvement — is to protect the groundwater basin from further contamination by hazardous materials and to assist other agencies in their work to reduce or eliminate existing groundwater contamination. The District staff has also been assisting the Regional Water Quality Control Board in the detection and cleanup of underground fuel leaks and coordinating with local Santa Clara County agencies to create a vadose monitoring well database.

Following meetings with the Treated Water Contractors, Retail Water Agencies, Agricultural Water Advisory Committee, and the Santa Clara Valley Water Commission, the District Board of Directors adopted water rates for 1988-89 which are shown at the end of this report. Zone W-2 groundwater charges and equivalent basic user rates for 1988-89 are $100 per acre-foot for municipal and industrial water and $25.00 per acre-foot for agricultural water. Groundwater charges and equivalent basic user rates for 1988-89 are $26.00 per acre-foot for municipal and industrial water and $6.50 per acre-foot for agricultural water in Zone W-5.

John T. O'Halloran
General Manager

This is the seventeenth annual report on the status of the Santa Clara Valley Water District's Water Utility Enterprise. The purpose of this report is to provide information on the following items:

- Current and future water requirements of Santa Clara County
- Current and future water supply available to meet those requirements
- Future capital improvement needs
- Future financial needs of the Water Utility Enterprise including expenditures and a means of financing them
- Water charges to be levied in any zone or zones of the District for the next fiscal year

1986-87 Water Picture * * *

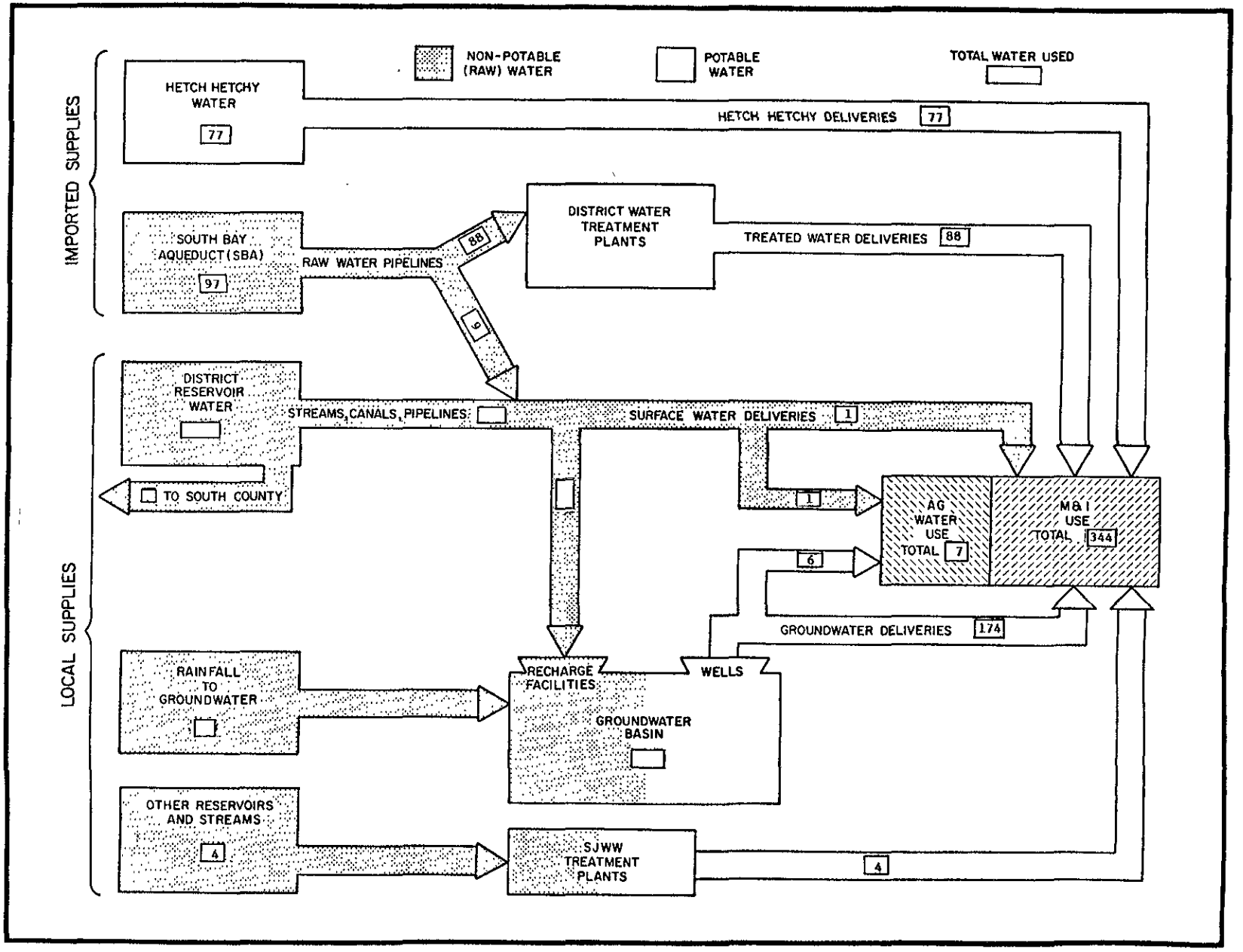
Rainfall in Santa Clara County during 1986-87 was about 55% of normal resulting in a reduction of the amount of water stored in local reservoirs and groundwater subbasins. Low reservoir levels allowed the District to completely drain two of its major reservoirs (Anderson and Lexington) in October 1987 to inspect the facilities. In order to offset the lower rainfall and low reservoir storage, the District imported additional water from the San Felipe Division which was used to recharge the groundwater basin and supply the treatment plants.

(The District does not have at this time all the information needed to complete the diagram at the right.)

WATER SUPPLY AND USE
NORTH SANTA CLARA COUNTY

1986-87*

(All values in 1,000 Acre-Feet)



* Information necessary to complete this diagram was not available at the time this report was prepared.

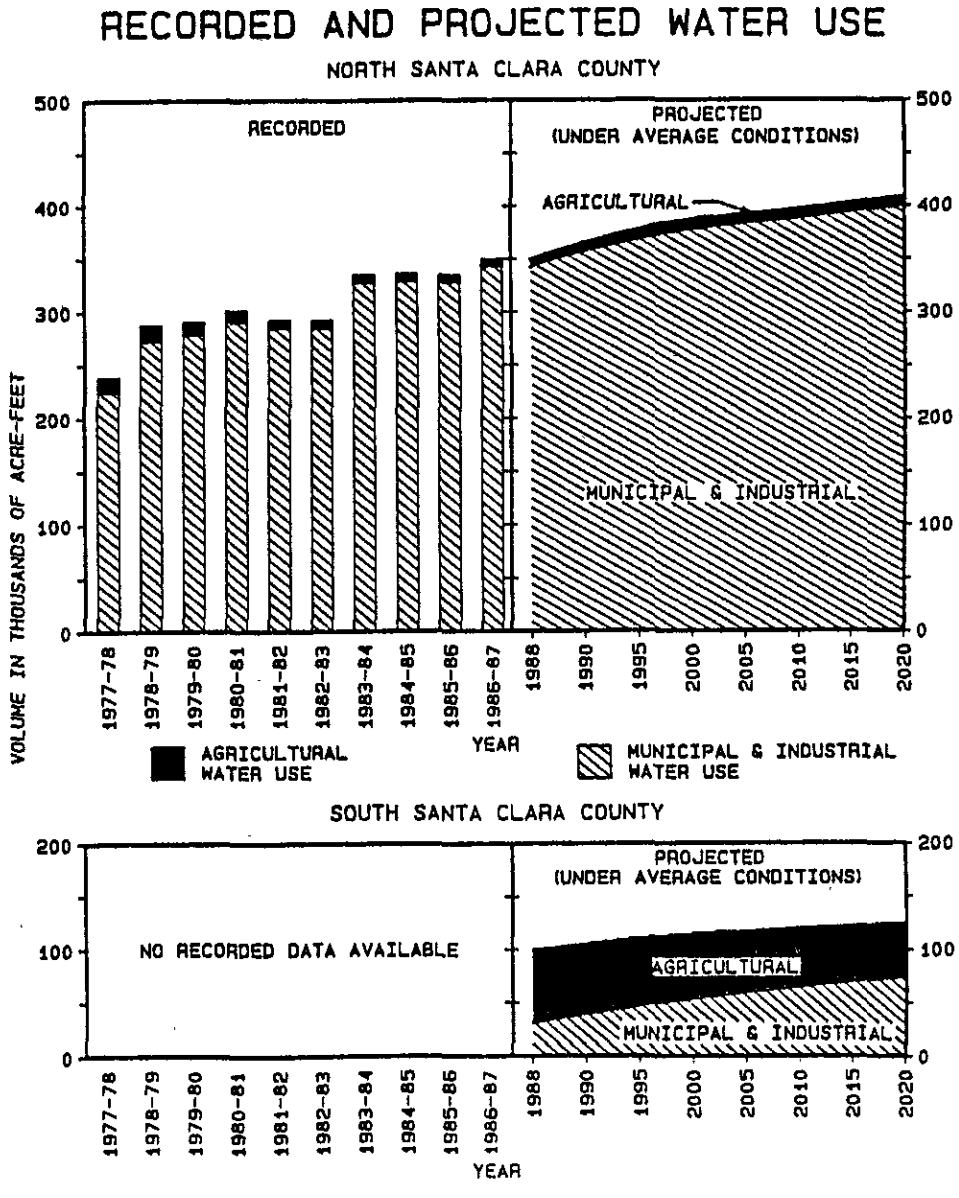
Water Use * * *

Water use in Santa Clara County is categorized as either agricultural or municipal and industrial. Recorded North County water use since 1977-78 is shown to the right.

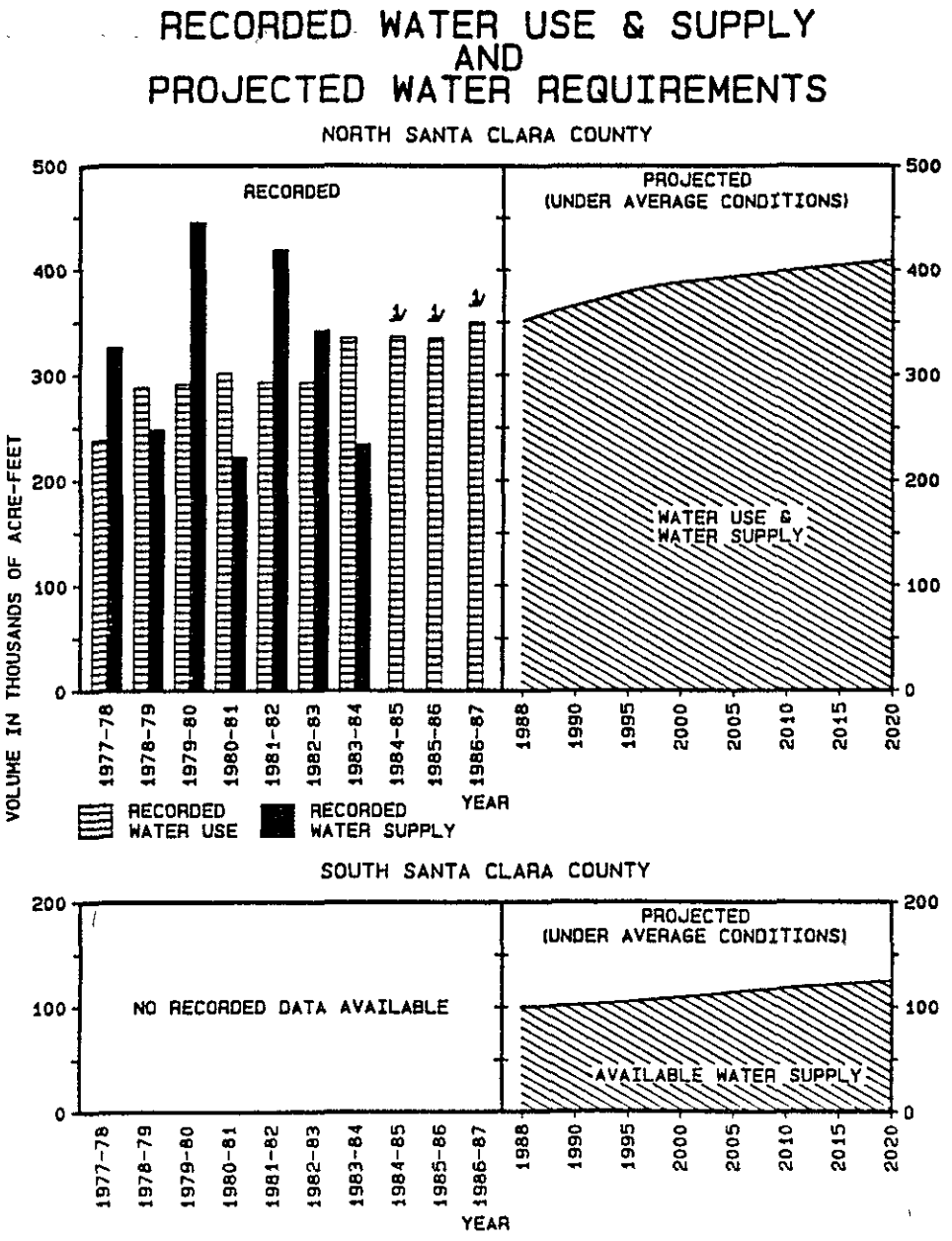
Water use in North Santa Clara County is predominantly municipal and industrial. The projections show an increase through 2020 when the total annual water use is estimated to be 410,000 acre-feet. Agricultural water use is expected to continue to decrease through 2020.

Water use in South Santa Clara County, the area south of Metcalf Road, has been primarily agricultural and has been met by available local supplies, mainly from groundwater pumping. In South Santa Clara County, it is anticipated that municipal and industrial water requirements will continue to increase while agricultural requirements will decrease. Total annual water use in South Santa Clara County is projected to increase to about 125,000 acre-feet by 2020.

Portions of Zone W-5 in South County have not had a formal groundwater production measurement program until fiscal year 1987-88. Thus, estimates of water use in South County have been primarily based on land use and can only be considered approximate.



* * * and Water Supply



1/ Some data necessary to determine 1984-87 values are not yet available.

Present sources of water supply in North Santa Clara County consist of locally conserved water and water imported via South Bay Aqueduct, San Felipe Division, and Hetch Hetchy Aqueduct. The recorded annual water supply and water use in North Santa Clara County since 1977-78 are shown to the left. South Santa Clara County is supplied by locally conserved water and, since June of 1987, water imported via the San Felipe Division.

In 1986-87, local water supplies in the County were lower than average. During this period, the imported water combined with local supplies adequately met the water needs of the County. The 1987-88 rainfall is approximately 60% of normal, runoff is far below normal, and the District's Board of Directors asked for voluntary water conservation.

In-County Water Distribution System * * *

In 1975, the District published its Master Plan describing projects required to meet projected water needs in Santa Clara County through the year 2020. That construction program has been recently updated to meet changing conditions. The major facilities currently under construction are Santa Teresa Water Treatment Plant, Santa Teresa Force Main, Santa Teresa Tunnel, Greystone Pipeline, Greystone Pump Station, and Snell Pipeline. The facilities proposed to be constructed between now and fiscal year 1990-91 are Calero Pipeline, Milpitas Pipeline, and Mountain View Distributary. Rinconada and Penitencia Sludge Handling Systems are also planned to be completed in 1989. Rinconada and Penitencia Water Treatment Plant Disinfection Modifications, West Pipeline Extension, Parallel West Pipeline, Parallel East Pipeline, and East Reservoir and Delivery Main are scheduled for construction during the 1990-94 period.

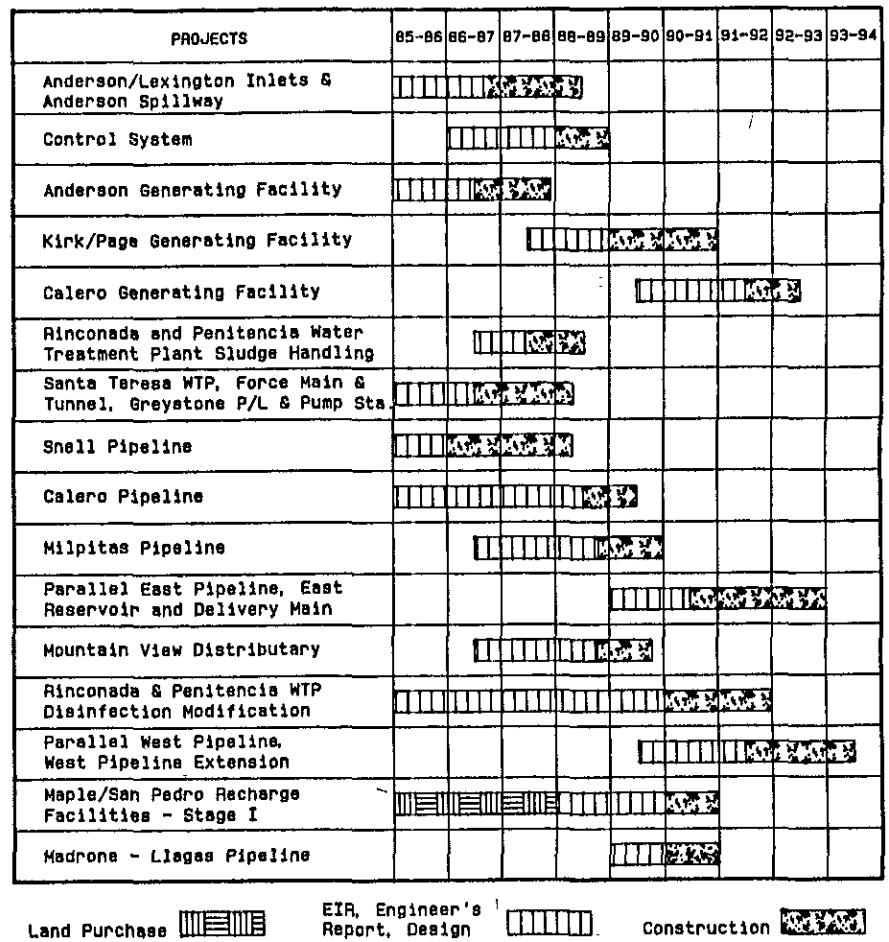
The 1983 master plan report for South Santa Clara County recommended a groundwater recharge and extraction system for meeting projected supplemental South County water needs. Purchase of land for South County recharge facilities, initiated in 1983-84, was completed in 1988. Maple Avenue and San Pedro Stage I Recharge Facility and the Madrone-Llagas Pipeline are currently scheduled for construction in 1990-91.

Anderson Dam hydroelectric power generation facility is under construction. A reevaluation of the economics of a hydroelectric power generation facility at the Kirk and Page Turnouts from the Central Pipeline is completed and found to be uneconomic. A Calero generating facility is scheduled for construction in 1992.

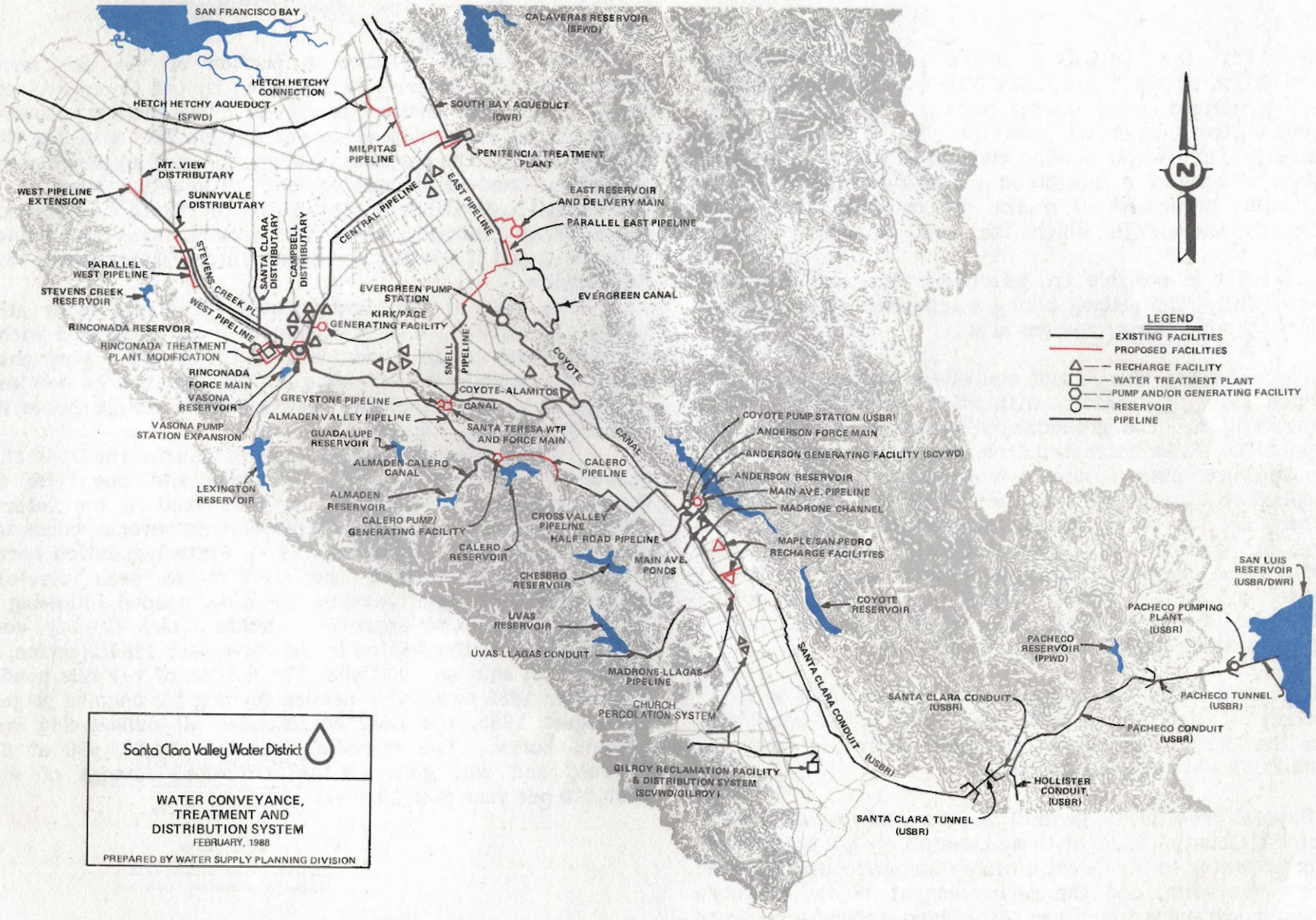
The District has been under a mandate from the State Division of Safety of Dams to reinforce Stevens Creek Dam, replace Coyote Spillway, and increase the spillway capacity of Anderson Dam. The modifications to Stevens Creek Dam and replacement of Coyote Spillway are complete. Enlargement of the Anderson Spillway is essentially complete. New inlet structures at both Anderson and Lexington Reservoirs are under construction and will be completed in October 1988.

The map on the following page shows the location of the District's major existing and proposed facilities.

PROJECTED NEW FACILITY CONSTRUCTION PROGRAM
FOR THE WATER UTILITY ENTERPRISE
1985-86 THROUGH 1993-94



* * * Improvement and Expansion



Sources of Revenue * * *

In 1971 the District's Board of Directors, upon recommendation of the Santa Clara Valley Water Commission, adopted the current water pricing policy. This pricing policy incorporates two important concepts in water resources management: (1) a water pooling concept in which water for a given zone of benefit is considered a single commodity with a uniform value regardless of source or cost and (2) a water management concept in which the user pays for benefits received.

Where it is possible to determine the benefits a user receives directly, the pricing policy establishes water charges. The District's major water charges are:

- A groundwater charge and equivalent basic user charge, which are associated with the benefit of water consumption. The groundwater charge is an excise tax applied to water extracted from the groundwater basin in groundwater charge zones, while the basic user charge is applied to other types of water delivered by the District. There are two rates, one for agricultural (Ag) water and one for municipal and industrial (M&I) water. Revenue from these charges pays for the general costs of providing water and for the capital costs of constructing in-county facilities either through "pay as you go" financing or through debt repayment of bonds and loans.

- A treated water surcharge, which is associated with the benefit of receiving treated water. It is levied in addition to the basic user charge on water delivered from the District's water treatment plants.

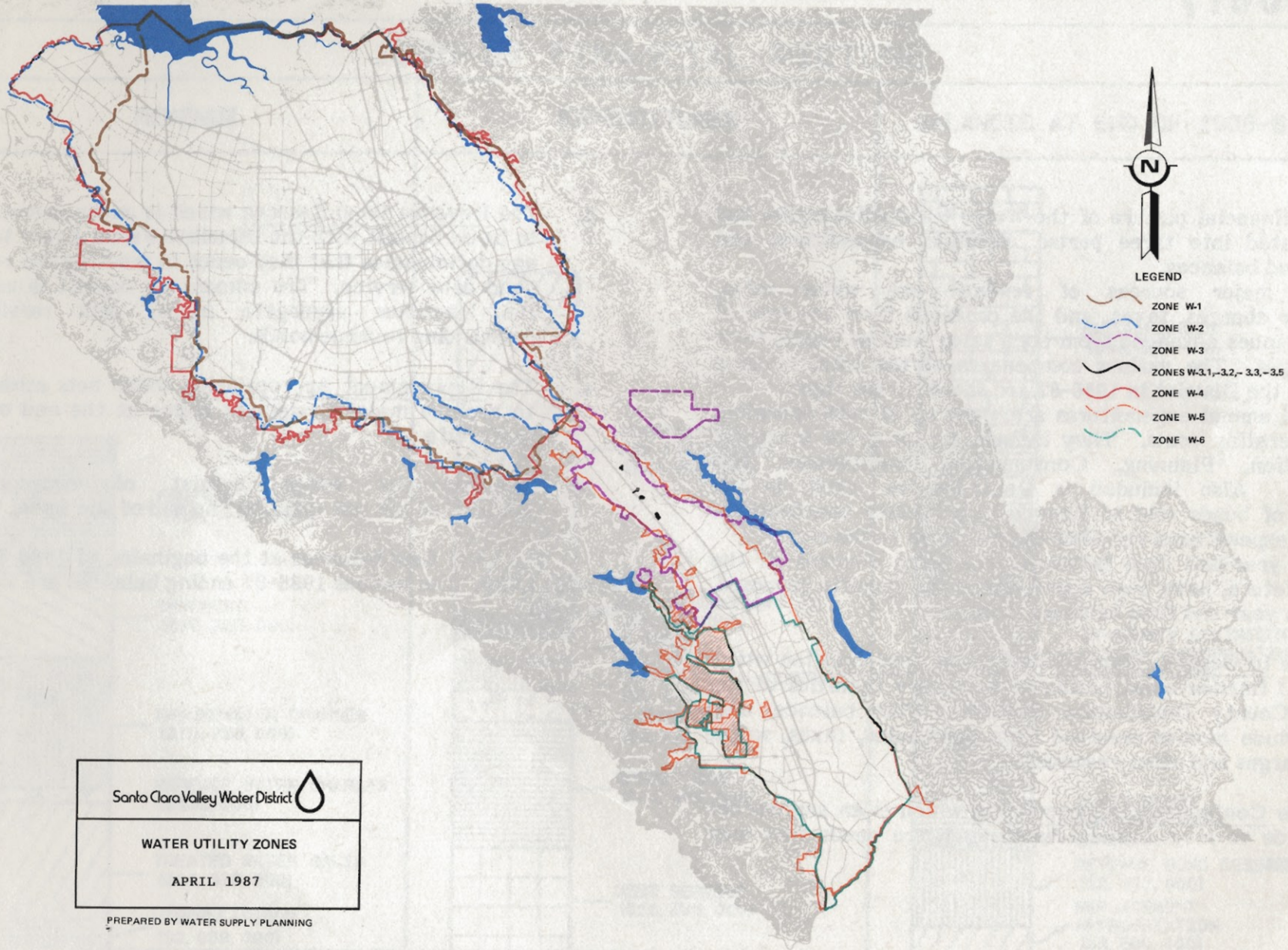
Several benefits are general in nature serving all or large areas of the County. Some of these benefits are the availability of imported water to the County, recreation associated with the District's reservoirs, and the replenishment of the County's groundwater subbasins which has halted land surface subsidence and which provides a supply of water in drought periods.

The District receives a portion of the one percent Countywide tax revenues as allocated by the County Assessor based on pre-1978 District tax levies. The District also levies additional ad valorem taxes under Article XIII A of the State Constitution for the purposes of a) paying prior approved general obligation bond debt service and b) meeting part of the contractual obligations to the State for South Bay Aqueduct water. The District's major debt service taxes are levied in Zones W-1 and W-6 while the State Water Project Tax is levied Countywide.

The map at the right locates the major water utility zones. Zones W-1, W-3, W-4, and W-6 are associated with ad valorem taxes while Zones W-2 and W-5 are water charge zones. In fiscal year 1987-88, a groundwater charge was levied in Zone W-5, which included previous water charge Zones W-6, W-3.1, W-3.2, W-3.3 and W-3.5.

To fund the construction of new facilities the District has relied on both pay-as-you-go financing and long term debt financing from revenue bonds as authorized by the voters in 1977. The last remaining 1977 authorized revenue bonds were sold in April 1984. In January 1984, State legislation became effective which allowed the District to seek electorate authorization to issue revenue bonds as needed following the Board of Directors' approval. Santa Clara County voters approved this authorization in the November 1984 election, and the District sold an additional $30 million of revenue bonds in November 1985 to provide needed funding for ongoing projects. In August 1986, the District refunded all outstanding water revenue bonds. The refunding was for $94,935,000 at 6.8% interest and will generate an estimated savings of about $200,000 per year over 20 years.

* * * Related to Costs of Providing Benefits



The Financial Picture * * *

The financial picture of the Water Utility Enterprise has been separated into three parts: revenue, expenditures and year-end fund balances.

The major sources of revenue are water sales, groundwater charges, taxes, and the proceeds from the sale of bonds. Revenues advanced from bond sales must be repaid from water charges. The various components of the total revenue received by the District in 1986-87 are shown to the right.

Total annual expenditures are made up of both operating and non-operating costs. They include the program costs for Administration, Planning, Construction, Maintenance and Operations. Also included is Debt Service which is the repayment of bonds sold to finance new facility construction. The actual expenditures for 1986-87 are shown to the right.

The year-end fund balances, the third element of the financial picture, have been appropriated for specific purposes. The various year-end fund balances include:

1. The In-County Distribution System Appropriation which will finance construction of necessary facilities of the In-County Distribution System. This balance may include monies received from bond sales, taxes, water charges and other revenues.

2. The Contingency Appropriation which is an amount set aside to meet unforeseen expenditure needs that may arise.

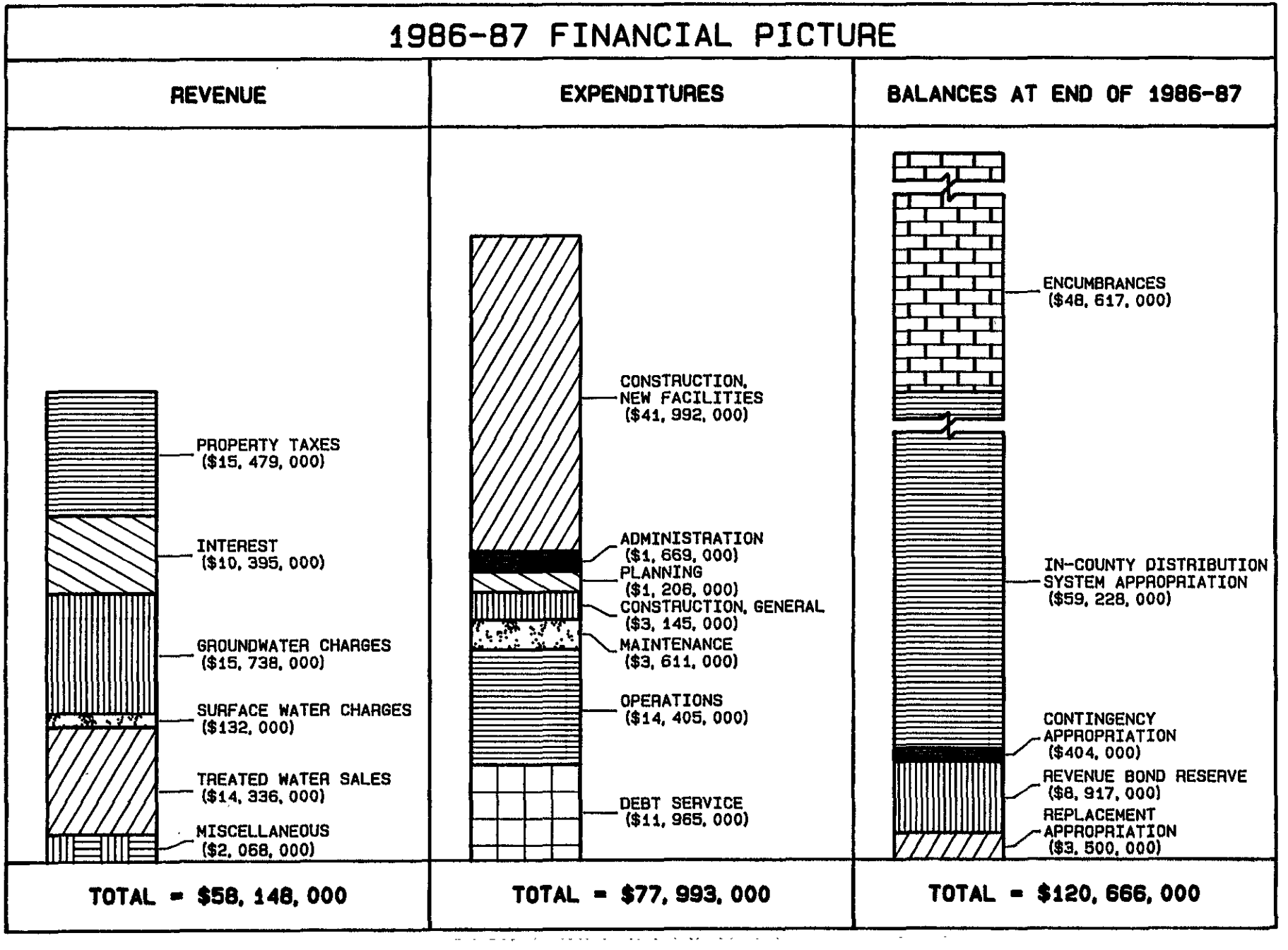
3. The Revenue Bond Reserve which is an amount required to be on deposit with the District's Fiscal Agent to meet any deficiencies that may occur in meeting the revenue bond debt service. The amount on deposit is equal to the maximum aggregate annual debt service on outstanding revenue bonds.

4. The Replacement Appropriation which sets aside funds to replace major equipment items at the end of their useful life.

5. Encumbrances which consist of appropriations committed but not spent by the end of the fiscal year.

The total fund balances at the beginning of 1986-87 were $140,511,000. The various 1986-87 ending balances are shown to the right.

* * * of the Water Utility Enterprise (1986-87)



Financial Estimates * * *

Revenue, expenditures and year-end balances for the 1987-88 fiscal year as estimated in February 1988 are shown in the graph on the opposite page.

Revenue from groundwater charges and raw surface water sales is collected semiannually in the month following the 6 month period in which the water was used. Therefore, the 1987-88 revenue projections incorporate the collection for groundwater extractions and raw surface water deliveries made in the latter half of 1986-87 based on groundwater charges and basic user rates of $95 per acre-foot for municipal and industrial (M&I) water and $23.75 per acre-foot for agricultural (Ag) water in Zones W-2, W-3.1, W-3.2, W-3.3 and W-3.5. The rates applicable to groundwater extractions and raw surface water deliveries made in the first half of 1987-88, which are due and payable in that year, are $100 per acre-foot for M&I water and $25 for Ag water in Zone W-2 and $22 per acre-foot for M&I water and $5.50 for Ag water in Zone W-5.

The treated water sales revenue for 1987-88 is based on the basic user rate of $100 and the treated water surcharge rate of $90 for a combined rate of $190 per acre-foot.

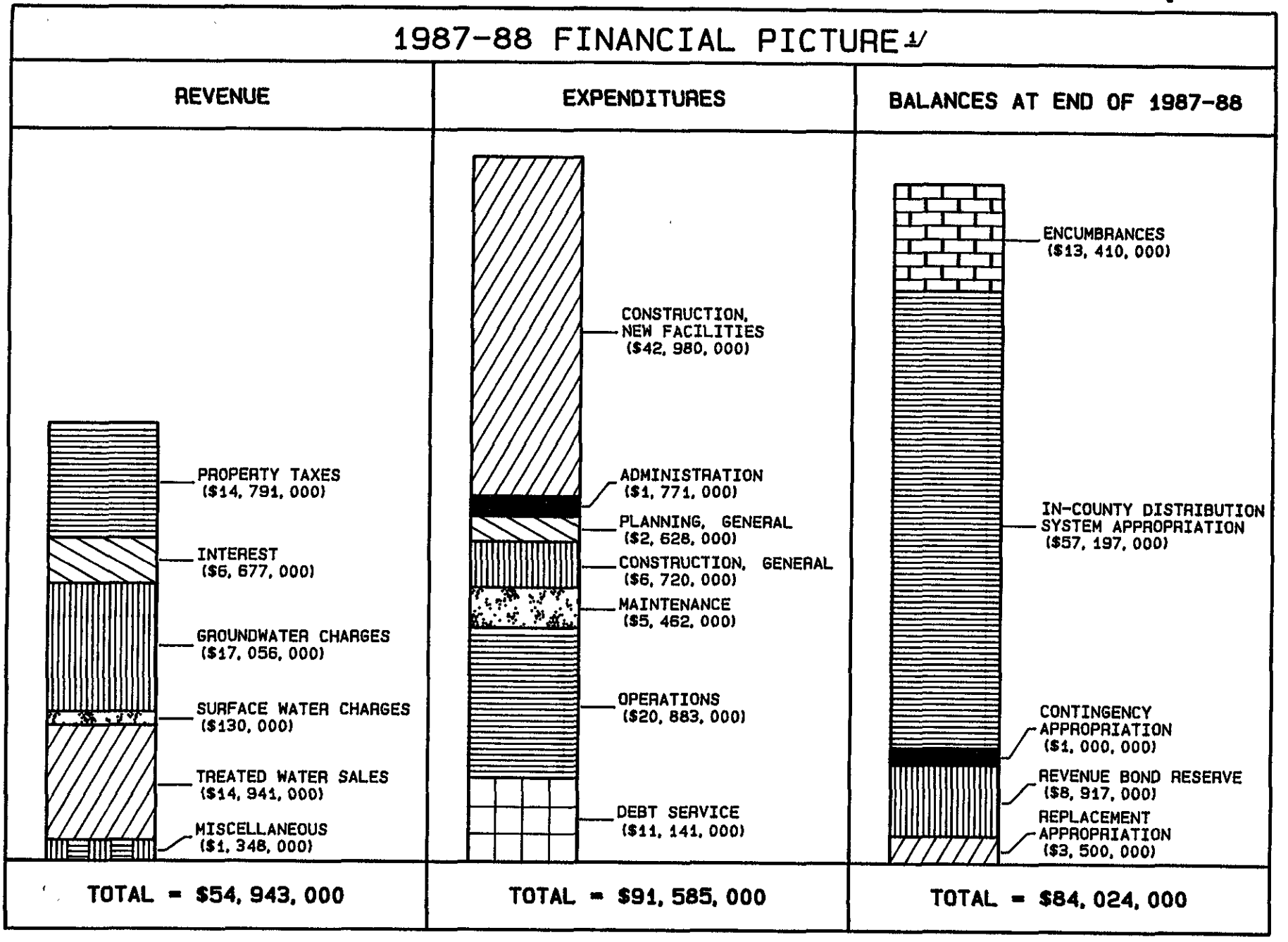
Estimated revenue from property taxes includes income from the one percent allocation ($5,354,000), from debt service taxes ($2,219,000), and from the State Water Project Tax ($7,218,000).

The estimated 1987-88 expenditures are as shown in the table on the opposite page. The construction expenditures are not the total contract amounts. Only the estimated dollars spent (cash outflow) during the year are shown in the table and discussed on this page as expenditures. The remaining contract amounts encumbered for future years' expenditures are included in the year end balances.

The major expenditures for the year are Santa Teresa Water Treatment Plant, Santa Teresa Tunnel, Greystone Pipeline and Pump Station, Santa Teresa Force Main construction ($19,945,000) and Snell Pipeline Phase I and Phase II construction ($10,631,000). Other major expenditures are Anderson Spillway construction as well as Anderson and Lexington Inlets design and construction ($898,000), Rinconada and Penitencia Sludge Handling design and construction ($818,000), Calero Pipeline design ($270,000), Anderson Generating Facility construction ($1,949,000), Milpitas Pipeline planning and design ($106,000), Mountain View Distributary planning and design ($151,000), Rinconada and Penitencia Disinfection Modification planning ($100,000), Maple-San Pedro Recharge land purchase ($400,000), Control Systems design ($750,000), Well Sealing ($800,000), and Fuel Tank Leaks ($864,000).

The cost of imported water from the State Water Project is estimated at about $8,007,000 for 88,000 acre-feet entitlement with no surplus water available in 1987-88. Imported water from the San Felipe project during 1988 is projected to cost $4,397,000 for 75,000 acre-feet of water.

* * * for the Current Year (1987-88)



1/ ESTIMATED IN FEBRUARY 1988

Financial Projections * * *

Revenue as projected in February 1988 for fiscal year 1988-89 is shown on the opposite page. The projected revenue is based on groundwater charges and basic user rates for groundwater extractions and raw surface water deliveries made in the latter half of 1987-88, which are due and payable in 1988-89, of $100 per acre-foot for M&I water and $25 per acre-foot for Ag water for Zone W-2 and $22 per acre-foot for M&I water and $5.50 per acre-foot for Ag water in Zone W-5. The corresponding rates for groundwater extractions and raw surface water for the first half of 1988-89 and for treated water throughout the year are $100 per acre-foot for M&I water and $25 per acre-foot for Ag water for Zone W-2 and $26 per acre-foot for M&I water and $6.50 per acre-foot for Ag water for Zone W-5. The treated water surcharge rate for 1988-89 is $95 per acre-foot for a total treated water charge of $195 per acre-foot.

The projected revenue from taxes includes the one percent allocation ($6,276,000), the debt service taxes ($2,251,000), and the State Water Project tax ($7,205,000).

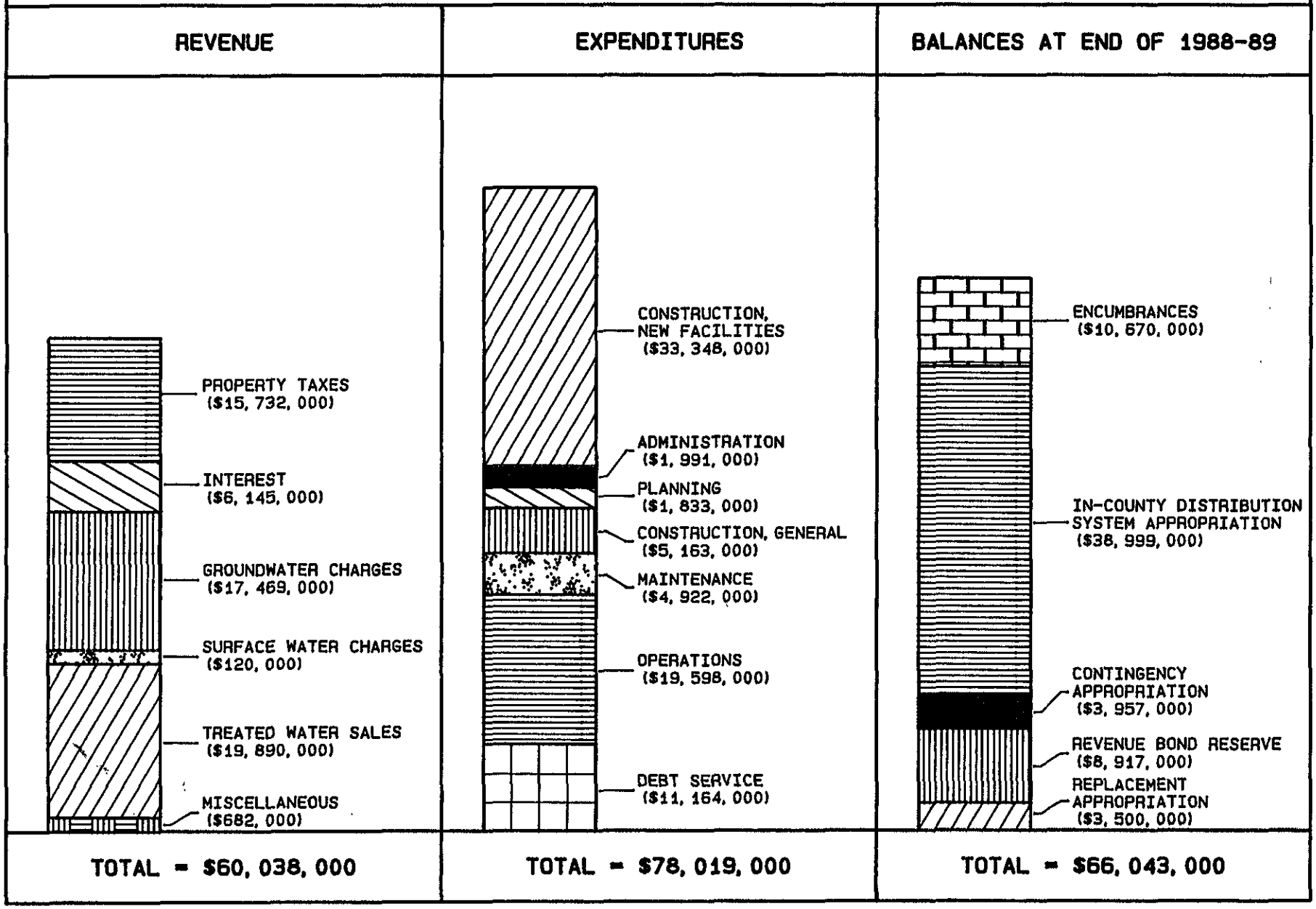
Projected expenditures for 1988-89 include costs to operate and maintain existing facilities, to purchase State Water Project and San Felipe water, and to design and build new facilities.

The projected 1988-89 expenditures shown on the opposite page and discussed on this page are estimated actual expenditures, not contract amounts. Estimated dollars remaining to fulfill outstanding contract obligations are shown as encumbrances at the end of 1988-89.

Major costs are Santa Teresa Water Treatment Plant, Santa Teresa Tunnel, Greystone Pipeline and Pump Station, and Santa Teresa Force Main construction ($5,128,000), Snell Pipeline Phase II construction ($3,100,000) Calero Pipeline construction ($6,723,000), construction of new Anderson and Lexington Inlet Structures ($1,914,000), Control System construction ($3,826,000), Rinconada and Penitencia Water Treatment Plant Disinfection Modification planning and design ($767,000), Rinconada and Penitencia Sludge Handling construction ($3,214,000), Milpitas Pipeline design and construction ($5,149,000), Mountain View Distributary design and construction ($637,000), design of the hydroelectric power generating facility on the Kirk and Page Turnouts from Central Pipeline ($163,000), Maple-San Pedro Recharge facilities planning ($282,000), Well Sealing ($963,000), and Fuel Tank Leaks ($980,000).

* * * for the Next Fiscal Year (1988-89)

PROJECTED 1988-89 FINANCIAL PICTURE[1]



1/ ESTIMATED IN FEBRUARY 1988

Water Charges * * *

Groundwater charges and equivalent basic user rates to be levied in 1988-89 in Zone W-2 are summarized in Table I below. Groundwater charges and equivalent basic user rates to be levied in 1988-89 in Zone W-5 are summarized in Table II below. The countywide ad valorem State Water Project Tax will be levied to generate $7,205,000.

TABLE I

GROUNDWATER CHARGES
AND BASIC USER RATES
IN ZONE W-2
FOR
FISCAL YEAR 1988-89

Agricultural Water (Ag)	$25.00/Acre-Foot
Nonagricultural Water (M&I)	$100.00/Acre-Foot

TABLE II

GROUNDWATER CHARGES
AND BASIC USER RATES
IN ZONE W-5
FOR
FISCAL YEAR 1988-89

Agricultural Water (Ag)	$ 6.50/Acre-Foot
Nonagricultural Water (M&I)	$26.00/Acre-Foot

WATER RATE COMPONENTS
AND WATER CHARGES
FOR FISCAL YEAR 1988-89 1/

Components		Charges		
COMPONENT	RATE	TYPE OF CHARGE	AG WATER	M & I WATER
Basic User, Zone W-2		Groundwater		
Agricultural	$25.00/AF	Zone W-2	$25.00/AF	$100.00/AF
Municipal and Industrial	100.00/AF	Zone W-5*	6.50/AF	26.00/AF
Basic User, Zone W-5*		Surface Water 3/		
Agricultural	6.50/AF	Evergreen Deliveries	72.00/AF	147.00/AF
Municipal and Industrial	26.00/AF	Half Road Deliveries	25.75/AF	45.25/AF
		Other Zone W-5 Deliveries*	16.50/AF	36.00/AF
Treated Water Surcharge 2/		Other Zone W-2 Deliveries	35.00/AF	110.00/AF
Contract	95.00/AF	Minimum Charge - Zone W-5*	29.50/YR	29.50/YR
Noncontract	28.00/AF	Minimum Charge - Zone W-2	85.00/YR	85.00/YR
Water Master	10.00/AF	Stored Water		
		Zone W-2	25.00/AF	100.00/AF
Capital Cost		Zone W-5*	6.50/AF	26.00/AF
Half Road Lateral System	2.75/AF			
		Treated Water 4/		
Power		Contract	-	195.00/AF
Half Road Lateral System	6.50/AF	Noncontract	-	128.00/AF
Evergreen System	37.00/AF			
		Reclaimed Water		
		Gilroy	20.00/AF	80.00/AF

* Zone W-5 includes Zones W-6, W-3.1, W-3.2, W-3.3, and W-3.5.

1/ Adopted by the Board of Directors through Resolutions 88-41 and 88-42 on May 17, 1988.

2/ Treated Water Surcharges for 1987-88, 1988-89, and 1989-90 are $90.00/AF, $95.00/AF, and $100.00/AF, respectively, as adopted by the Board of Directors through Resolution 87-43 on June 23, 1987.

(Footnotes continued on next page)

3/ Surface water charge is the sum of Basic User plus Water Master. Also, it includes Capital Cost and Power wherever applicable.

Evergreen Deliveries = Basic User (AG/M&I @ $25/$100) + Water Master ($10) + Power ($37)

Half Road = Basic User (AG/M&I @ $6.50/$26) + Water Master ($10) + Capital ($2.75) + Power ($6.50)

Other Zone W-5 Deliveries = Basic User (AG/M&I @ $6.50/$26) + Water Master ($10)

Other Zone W-2 Deliveries = Basic User (AG/M&I @ $25/$100) + Water Master ($10)

Minimum Charge W-5 = 0.75 X Basic User W-5 (M&I @ $26) + Water Master ($10)

Minimum Charge W-2 = 0.75 X Basic User W-2 (M&I @ $100) + Water Master ($10)

4/ Treated Water Charge is the sum of Basic User ($100) and Treated Water Surcharge ($95)